

WATER SOLUBLE CARBOHYDRATES DERIVED FROM LIGNOCELLULOSE BY ENZYME HYDROLYSIS

ABSTRACT

This is a method to create water soluble carbohydrates from lignocellulose containing cellulose by providing enzymes to the lignocellulose cellulose and subjecting the cellulose to hydrolysis. By combining an extractate, from a previous extraction, to the lignocellulose containing enzymes, hydrolysis of cellulose continues and creates water soluble carbohydrates and produces a residue containing lignins. Filtering the residue from water soluble carbohydrates containing enzymes will produce a filtrate and a filtered residue. The filtered residue is subjected to extraction by water to provide a water extracted residue and an extractate for recycle in subsequent hydrolysis, The filtrate containing water soluble carbohydrates and enzymes, is subjected to membrane filtration to substantially separate enzymes from the water soluble carbohydrates and produce enzymes for recycle and water soluble carbohydrates substantially devoid of enzymes. Thereby, water soluble carbohydrates are formed from lignocellulose and a residue containing lignins substantially devoid of water soluble carbohydrates is formed.